

IN THE CLAIMS

1. (original) A method for manufacturing natural dyes using beer sludge, comprising the steps of:

a step for drying beer sludge;

a step for mixing the dried beer sludge with a certain extraction solvent selected from the group comprising water, electrolysis reduction water, and electrolysis oxidation water, and extracting a coloring component; and

a step for filtering an extraction liquid.

2. (original) The method of claim 1, wherein said extraction step has an extraction condition that the extraction is performed at a water ratio of 1:5 through 10 at a temperature of 90 through 100°C for 2 through 3 hours.

3. (original) The method of claim 1, after said filtering step, further comprising a step for drying the filtered liquid and then obtaining powder component.

4. (original) The method of claim 3, wherein said drying

step is achieved based on a freeze and drying process.

5. (currently amended) ~~A natural dye fabricated based on the method cited in one claim among claim 4.~~

A natural dye using beer sludge fabricated based on a method comprising the steps of:

a step for drying beer sludge;

a step for mixing the dried beer sludge with a certain extraction solvent selected from the group comprising water, electrolysis reduction water, and electrolysis oxidation water, and extracting a coloring component; and

a step for filtering an extraction liquid.

6. (currently amended) A method for dyeing fiber product using a natural dye using beer sludge, comprising the steps of:

~~a step for adjusting pH of a natural dye fabricated based on the method of claim 1; and~~

~~a step for dipping a fiber product into a~~ the pH-adjusted natural dye and performing a dyeing process.

7. (currently amended) The method of claim 6, wherein pH of the natural dye is adjusted to 3 through 9 using nitric acid and sodium hydroxide, and said fiber product is one selected from the group comprising silk fabric, cotton fabric, nylon fabric and woven cotton/nylon, and the condition of said dyeing process is a water ~~ratio~~ ratio of 1:40 through 60 at 80 through 100°C for 60 minutes.

8. (original) The method of claim 6, before the dyeing process, further comprising a step for performing a mordanting process.

9. (original) The method of claim 6, after the dyeing process, further comprising a step for performing a mordanting process.

10. (original) The method of claim 6, wherein said dyeing step and said mordanting step are concurrently performed.

11. (currently amended) The method of ~~claims~~ claim 10,

wherein said mordanting step is performed using a mordant selected from the group comprising $K_2Cr_2O_7$, $KAl(SO_4)_2 \cdot 12H_2O$, $Al_2(SO_4)_3$, $CuSO_4$, $FeSO_4 \cdot 7H_2O$, and $SnCl_2 \cdot 2H_2O$, and the adding amount of mordant is 3 through 10% o.w.t., and said mordanting step is performed at a water amount of 1:40 through 60 at a temperature of 80 through 100°C for 60 minutes.

12. (currently amended) A fiber product dyed by a method ~~selected from the methods cited in claim 10.~~ for dyeing fiber product using a natural dye using beer sludge, comprising the steps of:
adjusting pH of a natural dye;
dipping a fiber product into the pH-adjusted natural dye and
performing a dyeing process; and
performing a mordanting process.